BURNING FEET

A 55-year-old lady presents with a 5-month history of burning pain in her feet which is gradually getting worse. It is now spreading up beyond her ankles. She has presented today because she can no longer cope with these symptoms.

Age	55 years
Gender	Female
BP	134/70
HR	70
RR	16
Temp	36.9
HIV status	-ve

QUESTIONS

1. What is the most likely diagnosis?
2. What else do you want to know from the history?
3. What would you look for on examination?
4. How would you manage this patient?

DISCUSSION

1. *What is the most likely diagnosis?*

The most likely diagnosis of this burning pain in a 'sock' distribution is a small fibre neuropathy i.e. damage to some of the small nerves in the feet (those involved in sensing pain and temperature). There are many causes for small fibre neuropathy; with **Diabetes** and **HIV** being the commonest causes worldwide. **Antiretrovirals** used to treat HIV can also cause this condition.

Other causes include:

Drugs

- Alcohol
- **Antiretrovirals** (e.g. didanosine, stavudine)
- Antibiotics (e.g. metronidazole, nitrofurantoin)
- Statins

Metabolic

- **Diabetes**
- Vitamin B12 deficiency
- Vitamin B6 toxicity
- Hypothyroidism
- Chronic kidney disease

Immune

- Autoimmune disorders (RA, SLE, IBD etc.)
- Paraneoplastic (i.e. seen in association with a distant cancer)

Infections

- **HIV**
- Hepatitis C
- Leprosy

Hereditary

- There are some rare causes of inherited neuropathy

2. *What else do you want to know from the history?*

First just clarify what she <u>means</u> by "burning". Does she mean pain, itching, sensory change? Our first impression was that her symptoms sounded like a neuropathy, but we need to make sure that there isn't another explanation for her symptoms (joint pain, poor blood supply, skin damage, plantar fasciitis etc.).

It would be helpful to ask a few more questions about associated symptoms.

- Does she have any weakness or numbness in her feet, legs or upper limbs? (Some of the causes of a small fibre neuropathy can cause damage to other sensory and motor nerves)
- When are her symptoms worst? (Often at night in this condition)
- What happens if she puts her feet in hot water? Can she feel it? (Patients with small fibre neuropathy may have reduced thermal sensation)
- During systems review it would be helpful to enquire about symptoms of systemic disease that might point to an underlying cause as above (e.g. polydipsia, weight loss, skin changes, joint pain, fevers etc.).

Given the numerous causes of neuropathy listed above, it would be very helpful to take a full **Past Medical History** and **Drug** History. Ask about **Diet** and **Alcohol intake** Enquire as to whether there is a **Family History** of neurological illness. This information may give you important clinical clues.

3. What would you look for on examination?

- On inspection of her feet there may be no abnormality.
- Though in long standing neuropathy the skin may become dry, cracked or shiny in the affected areas.
- It is important to do a neurological examination of the lower limbs and feet:
    - In a small fibre neuropathy power, reflexes and coordination will be <u>normal</u> as will light touch and joint position sense.
    - But there is often loss of <u>pinprick</u> sensation on the feet; and the patient may find it difficult to sense <u>heat</u>.
    - Patients with a mixed polyneuropathy may have additional clinical signs. Contact us to discuss if you are unsure!
- As part of your general examination try and assess whether there are any signs of underlying disease that may be causing the neuropathy
  e.g.
    - does she look malnourished and at risk of vitamin deficiency?
    - are there stigmata of Chronic Liver Disease suggesting underlying Hepatitis C or Alcohol excess?
    - thyroid goiter
    - cachexia (wasting with cancer)
    - uraemic skin (seen in chronic kidney disease)
    - skin changes of leprosy
    - joint changes of Rheumatoid arthritis

When you speak further with the patient, she tells you that these symptoms all started very gradually. She describes a burning pain in her feet. She has not noticed any weakness of her legs but says the discomfort is now extending beyond her ankle and up the leg. And she has begun to sense a similar burning pain in her fingers and hands. She says that it is not a feeling of numbness but instead it is a very painful sensation. She is otherwise well in herself and does not report systemic symptoms. On examination there are no abnormalities on inspection of her feet. Pulses are present. Tone, power and reflexes in her lower limbs are preserved. You find assessment of the sensation difficult but think you have been able to demonstrate reduced sensation to pinprick on both feet in a symmetrical distribution.

4. How would you manage this patient?

The history and examination confirm our suspicion of a small fibre neuropathy. In certain cases, treating the underlying cause of the neuropathy can lead to an improvement in symptoms.

So, what is causing our patient's neuropathy?

It is common to see this condition in association with HIV; as a consequence of the disease itself or of the antiretroviral medications. In these cases, it is advisable to liaise with the coordinator of the patient's HIV care before making any adjustment to medications. Our patient though is HIV negative. We have not got any clues from the history or examination about a possible cause. She is not on any medication, does not drink to excess and has no clinical stigmata of chronic disease.

How far should we investigate this patient?

You should discuss this with the patient.

- Some screening blood tests would exclude many of the conditions that we are considering (UE, LFT, TFT, Hep C, B12, HBA1C)
- But this might incur travel and costs that are unacceptable to the patient.
- What could be done locally? Could a blood sugar be checked in your clinic? Is her HIV status confirmed on recent testing?
- If further screening is not possible, discuss the alternative of treating symptomatically (e.g. with gabapentin or amitriptyline if available).
- Explain that this may mean reversible causes are not immediately identified and treated; but perhaps if further symptoms of underlying disease develop you could arrange more targeted testing.
- Note: Empirical treatment with B vitamins is probably not warranted unless the patient is malnourished, alcoholic or vegan

KEY POINTS

- Try to understand exactly what a patient means when they describe a particular symptom
- Diabetes and HIV (and HIV medications) are the commonest causes of a small fibre neuropathy
- On examination you may be able to demonstrate reduced pinprick and thermal sensation in the affected area
- A full neurological examination is helpful to ensure no other problems are being overlooked.
- Blood tests may be helpful in establishing a cause for the neuropathy
- Treatment is aimed at the underlying cause
- With agents such as gabapentin being used for neuropathic pain

If you encounter a patient with a suspected small fibre neuropathy and wish to discuss it further, then please do contact us through the App. Our Neurologists are specialists in this area, but the condition is seen and managed by our General Medicine doctors and General Practitioners too.